DELTA PRESSURE GENERATION SYSTEMS

June 29, 2004

Kristo Izzo
Board Secretary
New Jersey Board of Public Utilities
Two Gateway Center
Newark, NJ 07102

Re: COMPREHENSIVE ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE ANALYSIS - DOCKET NO. EX04040276

Dear Secretary Izzo:

Attached are comments of Delta Pressure Generation Systems LLC with regard to the Commercial and Industrial Programs for the above matter.

Respectfully submitted

Stephen Galowitz
Delta Pressure Generation Systems

I/M/O COMPREHENSIVE ENERGY EFFICIENCY AND RENEWABLE ENERGY RESOURCE ANALYSIS

DOCKET NO. EX04040276

COMMENTS OF DELTA PRESSURE GENERATION SYSTEMS LLC

Delta Pressure Generation Systems submits these comments to urge the Board to consider the substantial potential in New Jersey to use natural gas pressure letdown to generate energy/emissions free electricity and refrigerant. This technology is commercially viable and has the potential, in the near term, to make a substantial contribution to NJBPU's Clean Energy Program policy goals and objectives.

Natural gas is transported through pipelines at high pressures; generally between 600 and 1,500 psig. The pressure is reduced to between 60 psig and ¼ psig before it is consumed or delivered to an end user. Pressure reduction is achieved by passing the gas through one or more pressure metering and reducing stations. This pressure reduction wastes a significant amount of potential energy (see diagram one).

DeltaGen's natural gas pressure letdown generation systems recover this energy and harness it to perform useful work. Perhaps the most common situation is for a DeltaGen system simultaneously to generate electricity while reducing the gas pressure, by running in parallel with the pressure regulating station (see diagram two). DeltaGen can use either an expansion engine or an expansion turbine, neither of which burn nor consume the natural gas. The basic plant is an emissions free source of "green" power with very low marginal operating costs. Both technologies are established and systems can be fabricated using commercially available equipment. While this technology is not yet commonplace in the United States, there are dozens of installations internationally, especially in Europe, many of which have been in operation for decades.

Expansion engines are essentially modified steam engines and are similar to internal combustion engines, in that they have a reciprocating piston in a cylinder. Unlike internal combustion engines, however, there is no combustion of the gas. The turboexpander technology is like a steam turbine, except that it has been modified to use natural gas, rather than steam.

In addition, because the expansion of the gas reduces its temperature, there is a cooling byproduct which can be used as refrigerant. This refrigerant can be manufactured in conjunction with the production of electricity or, in appropriate circumstances, the system can be designed simply to maximize the refrigerant output. Alternatively, the power and cooling can also be used to provide the energy for a natural gas liquefaction facility. Electricity generated by the DeltaGen system could also be used to produce hydrogen through the electrolysis of water, with a payback almost 10 times faster than a similarly sized wind or photovoltaic system.

The benefits of natural gas pressure letdown generation technology include:

- Emissions free source of power
- Transmission grid relief
- Advantageous locational generation
- No consumption of fossil fuels
- Reduced expense to pipeline for preheating gas

However, this technology has occupied an awkward space in the market.

- It is not a typical customer sited DG facility, yet it is also not a typical utility project
- It is integrally related to the fossil fuel system (natural gas flows), yet it is a green technology because it can generate power with zero energy or emissions and does not consume the gas

As a result, this technology has been overlooked.

There is no doubt that the technical potential to generate free power in New Jersey is substantial. However, most of the gas LDCs and pipelines have not pursued these opportunities, either because it is outside their core business or because of the investment of time and money to develop the internal expertise.

DeltaGen was formed to help pipelines and gas LDCs capitalize on this latent potential energy without their having to "reinvent the wheel" by investing in the specialized expertise. DeltaGen will design, construct, own and operate the distributed electric generating plant within a hosted pipeline system (i.e. gas LDC or pipeline). This will minimize the time and resources required by the host.

DeltaGen is pursuing the development of projects in the 1 – 10 MW range. We have estimated that New Jersey has the technical potential to generate approximately 100 MWs of power using this technology. DeltaGen systems use a relatively mature technology and, after the first few installations, the installed costs are anticipated to be competitive with virtually any other form of distributed generation. Installed costs will generally be in the $800 – 1,500 /kw range.

Although the viability of the technology is generally accepted and uncontroversial, principal impediments to this technology are the institutional and regulatory hurdles to induce a gas pipeline or natural gas LDC to install these systems in parallel to their existing pressure metering and regulating stations. Establishing this technology as a priority for development in New Jersey would assist greatly in overcoming these hurdles and in capitalizing on this substantial opportunity.

We therefore urge the Board to

- Explicitly recognize, and encourage the development of, this technology
- Include this technology in its budget for 2005-2008
- Designate the development of this substantial energy potential as a priority of the Clean Energy Program for the next four years.

Thank you for the opportunity to submit these comments. If you need further information contact

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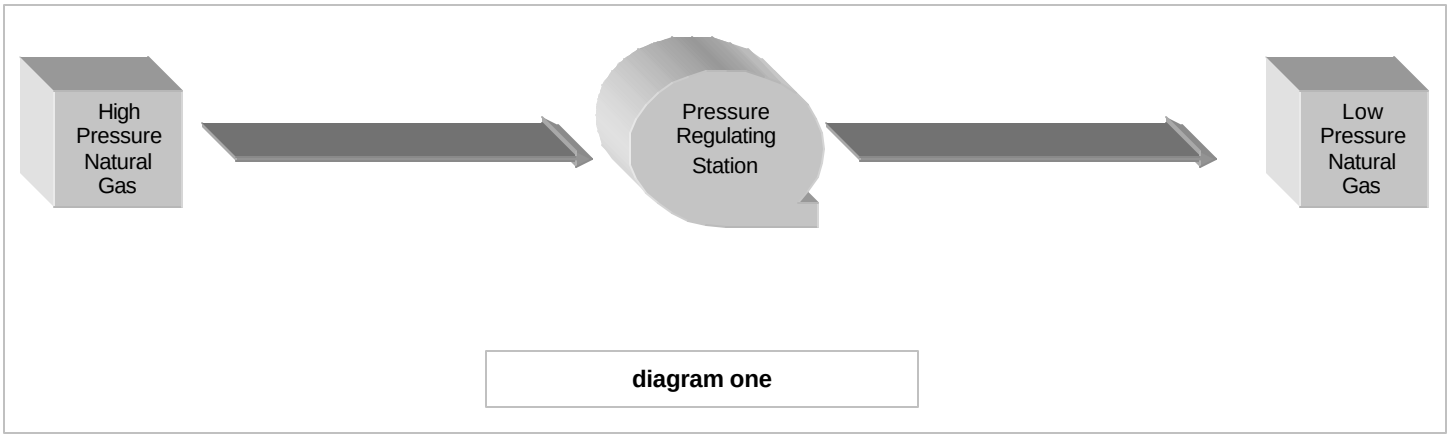

diagram one

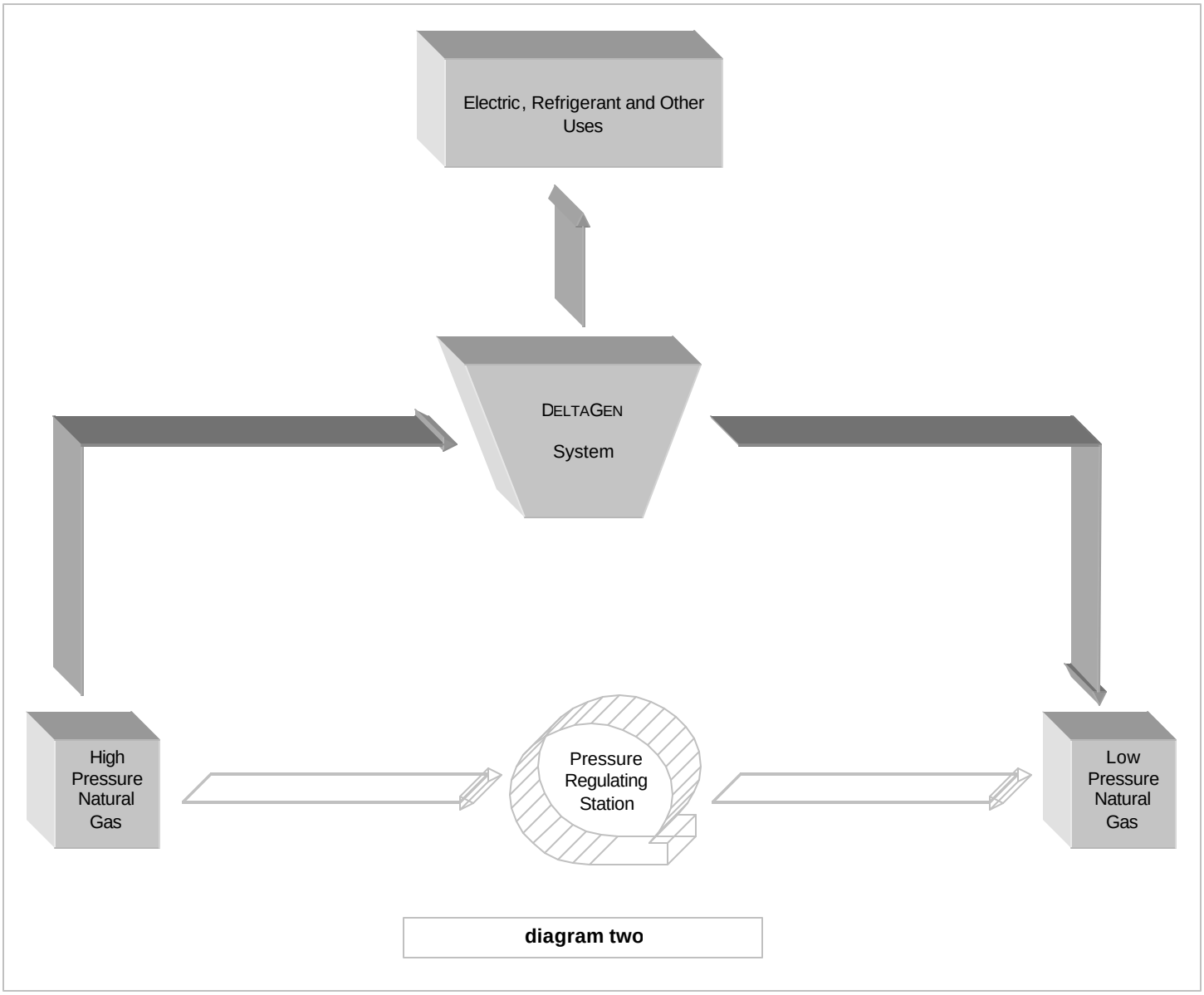

diagram two